



RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE

IN THE U.S. PATENT AND TRADEMARK OFFICE

March 27, 2003

Applicants: Kazuo NAKAMURA et al

For: BORON-DOPED ISOTOPIC DIAMOND AND
PROCESS FOR PRODUCING THE SAME

Serial No.: 09/732 799

Group: 1765

Confirmation No.: 2965

Filed: December 8, 2000

Examiner: Kunemund

Atty. Docket No.: OPS Case 421A

Assistant Commissioner for Patents
Washington, DC 20231

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SECOND AMENDMENT AFTER FINAL REJECTION

Sir:

In response to the Office Action dated September 23, 2002, Applicants respectfully request entry of the following amendments:

IN THE CLAIMS

Please cancel Claims 20 and 22-32.

Please amend Claim 18 as follows. A marked-up copy is enclosed.

18. (Amended) A method of manufacturing a single crystal diamond p-type semiconductor having a thermal conductivity of from about 26-31 W/cm²K and a boron content not exceeding 100 ppm comprising the steps of:

- providing a carbonaceous material containing isotopically purified ¹²C or ¹³C;
- providing a flux containing a nitrogen getter;
- adding boron into the carbonaceous material or/and the flux, or around the carbonaceous material and the flux;
- and

- diffusing the carbonaceous material into the flux under a high temperature and pressure to form a boron-doped single crystal diamond p-type semiconductor on a seed crystal diamond.